

Section 501. PLANT MIXED HOT MIX ASPHALT

501.01 Description. Plant mixed hot mix asphalt (HMA) shall consist of asphalt binder, aggregates, mineral filler, and other additives.

501.02 Materials. Materials shall meet the following requirements.

Aggregates	902
Mineral Filler, 3MF	902
Anti-Foaming Agent	904
Asphalt Binders	904

The HMA and the grade of asphalt binder to be used will be specified in the contract documents.

Anti-foaming agents may be used only as specified in Section 904. No additional compensation will be allowed for the use of anti-foaming agents.

Blended aggregates used for HMA top course mixtures, except top courses for shoulders and temporary roads, must meet the Aggregate Wear Index (AWI) specified in the contract documents.

A. **Composition of HMA Mixtures.** Aggregates used in the mixtures shall conform to the applicable requirements specified in the contract documents.

1. **Mix Design.** MDOT's *Procedures Manual for Mix Design Processing* shall be followed for all mixture designs. Mix designs that have been previously approved for use may be used on other projects if approved by the Engineer. The Contractor shall certify in writing that the materials used in the mixture are from the same source as the materials used in developing the mix design or the approved Job Mix Formula.
2. **Recycled Mixtures.** The Contractor may substitute reclaimed asphalt pavement (RAP) for a portion of the new materials required to produce the HMA for the project. The mixture shall be produced according to Subsection 501.02.C. Inclusion of RAP in the mixture shall not change the contract unit price.
 - a. **Stockpile Requirements.** RAP for HMA mixtures shall be processed to a size compatible for the mixture specified. The RAP stockpile shall have sufficient material to produce the recycled mixture(s) approved for the project. If the stockpile conditions are not met, the Contractor shall have an approved mix design available for use at the same contract unit price. An AWI value of 240 will be assigned to all RAP, unless documented evidence of a different value is presented by the Contractor. The Contractor shall perform the quality control testing on the RAP during the processing and stockpiling in accordance with this subsection. On projects where the RAP is being removed from the project, the Contractor shall provide the test data from cores.

A complete mixture analysis, including gradation of aggregate, asphalt binder content and theoretical maximum specific gravity, shall be performed for every 1000 tons of processed RAP. For stockpiles and projects less than 3000 tons, a

minimum of three mixture analysis shall be provided. Documented evidence of testing along with the accumulated tonnage in the stockpile must be provided to the MDOT Laboratory before a mix design will be processed.

- b. **Mix Design.** The Contractor shall submit materials for recycled mixture designs according to the *Procedures Manual For Mixture Design Processing*.
- B. **Equipment for Producing HMA.** Hot mix asphalt plants must be certified at least three work days prior to mix production. Certification of hot mix asphalt facilities will be according to MDOT's *Manual for the Certification of Hot Mix Asphalt Plants*. A seal of certification must be posted in the plant control office.
- C. **HMA Production.** The Contractor shall have an approved mix design on file with the Engineer for the mixture specified for use on the project two work days prior to any production of that mixture. The Contractor may elect, with the prior notification to the Engineer, to produce and test the mixture(s) on a trial run for the project prior to placing the mixture on the project. The trial run testing frequency will be at or greater than the frequency agreed upon for the project. Requests for job mix formula changes may be based upon trial run testing. All costs associated with trial run testing will be borne by the Contractor.

Asphalt binders shall be heated in a manner that will ensure the even heating of the entire mass, with an efficient and positive control at all times. Asphalt binders shall be heated to a temperature consistent with the type of binder, except that at no time shall the asphalt binder or the HMA exceed the maximum temperature specified in Table 904-5. Any asphalt binder and mixture whose temperature exceeds these maximum temperatures will be rejected. All asphalt binder found to be contaminated will be rejected.

Aggregates shall be stockpiled at the facility in a manner to prevent them from segregating. Aggregates shall be dried to a moisture content that will produce satisfactorily coated HMA consistent with the type of hot mix asphalt plant being used. For batch and continuous plants, if the aggregates in the hot bins contain sufficient moisture to cause foaming or a soggy mixture, they shall be rejected and removed from the bins.

The Contractor shall provide uniformity in the gradations of the aggregates placed in the cold feed system. The blend of aggregates produced for the mixture by combining aggregates from two or more cold feed bins must be within the job mix formula tolerances.

One or more hot aggregate bins may be used to proportion aggregates to meet the specified tolerances; however, the cold feed requirements must still be met.

501.03 Construction. See section 502 for construction methods.

501.04 Measurement and Payment. HMA mixtures, associated materials, equipment, and labor are included in other contract items.